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THE JAPANESE BONUS --  
PROFIT SHARE OR DISGUISED WAGE?

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Number 392

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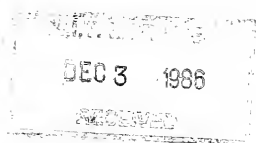


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## The Japanese Bonus -- Profit Share or Disguised Wage?

### Introduction

The bonus payment system is one of the exotic features of Japanese labor markets that have long fascinated outsiders. Recently interest has been heightened by the realization that the bonus system may have important macroeconomic implications. It is at least conceivable that some limited part of Japan's remarkable ability to stabilize unemployment at low, steady rates is due to the automatic pay flexibility that comes with profit sharing. For a subject of such potential importance, the Japanese bonus system has been relatively little studied. This paper is primarily directed at addressing what seems to me to be the most basic first question to ask: From an overall macroeconomic perspective, is it more accurate to view the Japanese bonus system as having significant profit-sharing elements, or should we see it more like a disguised wage?

### Background

The purpose of this section is to place the subject of the paper in perspective.

The following stylized facts might be taken as roughly descriptive of how the "Japanese model" of the labor market differs somewhat from others:<sup>1</sup>

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<sup>1</sup> Shimada (1983) contains an excellent survey of the English language literature.

(1) Firms hire workers for "lifetime employment" (The shushin koyo system). In fact this is done primarily by the large firms, and only for their so-called "permanent" employees. Nevertheless, the "lifetime commitment mentality" seems to be a fair characterization of the system as a whole, which, if anything, may become more valid as the distinction between permanent and temporary employees seems to be breaking down over time.<sup>2</sup>

(2) There is a steep age-earnings profile for permanent workers up to retirement age of 55 or 60. Pay is determined primarily, but not exclusively, by seniority. (This nenko system is beginning to erode in many places as it increasingly comes to be viewed as anachronistic.)<sup>3</sup>

(3) The Japanese workplace is a relatively cooperative and egalitarian environment. There are few work rules, job reassignments are common, and a high degree of company loyalty motivates productivity-enhancing behavior. Unions are organized along enterprise or company lines. Blue and white collar workers in the same firm are comparatively undifferentiated in terms of perquisites, treatment, union coverage, method of payment, and how much they are paid.<sup>4</sup>

(4) Japanese society as a whole displays a relatively intense commitment at a grass-roots level to maintaining full employment. Compan-

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<sup>2</sup> Koike (1983a), (1983b), and references therein, sometimes argues the contrarian view that Japanese industrial relations, and particularly the lifetime employment system, are not nearly so unique as is sometimes made out. He has a point when he does not push this view too hard. A more balanced view is contained in Hashimoto and Raisian (1985).

<sup>3</sup> For discussion of the nenko system, see, e.g., Shimada (1983), or Shirai (1983b).

<sup>4</sup> For descriptions of the Japanese workplace, see Koshiro (1983a)

ies and unions seem almost ashamed to lay off workers outright. Layoffs are not by seniority. There appears to be a somewhat higher degree of social responsibility in wage setting, as was dramatically shown by labor heeding the 1975 call for wage restraint in the face of strong inflation caused by the first oil shock. Work sharing is common, as Japanese firms tend to adjust hours (+4% compared with +2% in other OECD countries) rather than employment.<sup>5</sup>

(5) A significant fraction of the average worker's pay is in the form of a semi-annual bonus. The remainder of this section is devoted to describing the Japanese bonus system in some detail.

The typical Japanese worker's pay is divided into two categories. The first component is officially called kimatte shikyūsuru kyūyo, "the wage that is surely paid," which I will refer to simply as base wages, or wages -- although they are not really hourly wages at all, but rather a monthly salary. The second component is called "special cash payments" in the official statistics and the defining characteristic is held to be that it is a payment made "temporarily, unexpectedly, or erratically at the discretion of the employer." This category consists overwhelmingly of bonus payments, even when their terms and amount are established by collective agreements.

The bonus payments are a significant economic entity. In recent years they have constituted about one fourth of a worker's pay. Economy-wide, aggregate bonus payments typically exceed before-tax profits.

Bonuses are usually paid twice a year -- in summer (mostly June and July), and at year end (December). Insignificant amounts are sometimes

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<sup>5</sup> On many of these points see Shirai (1983b). Hours adjustments are discussed in Hamada and Kurosaka (1984).

paid in August, March, and January. The bonus probably traces back in history to the time when merchants gave small gifts to employees at Buddhist festival times. Although blue-collar and low status white collar workers before the war often received a lump sum of money twice a year in addition to their regular pay, the amount of money involved was tiny and in no way comparable to the semi-annual profit-sharing bonuses received as a mark of honor by high-status white-collar employees with advanced educational backgrounds.

It is only after the Second World War that the payment system emerges in its present form, as an almost incidental part of a much broader trend. The main feature of this trend was a deemphasis, to the point of near-elimination, of the invidious status categories of prewar Japan with their legacies of a feudal past. As one by-product of the immediate postwar process of democratizing the workplace, which the unions fully supported, all regular employees -- blue collar and white -- were henceforth to be paid a monthly salary instead of an hourly wage, supplemented by meaningful semi-annual bonuses with profit-sharing overtones for every regular employee irrespective of category.<sup>6</sup> While large relative to before the war and by comparison with other countries, at first the bonus payments constituted less than two months' worth of supplement, rising gradually to over four months by 1973 and falling back to slightly more than three and a half months currently. Economy-wide average bonus payments for regular private employees from 1958 through 1983 are shown in Table 1 (expressed in months of base wages, which is how most Japanese think of it).

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<sup>6</sup> This interpretation is emphasized by, among others, Shirai (1983b), p. 131.

The bonus system is widely viewed as serving three purposes. One purpose is to compensate individual effort. Since the bonus is largely discretionary, as opposed to the base wage of the nenko system (which is primarily related to length of service), management typically makes some part of a particular employee's bonus depend on the performance appraisal of that individual worker's job performance.<sup>7</sup> A second purpose of the bonus is to emphasize, symbolically and practically, the common bond linking the company's well being with the well being of its regular workers. Finally, the bonus system provides some pay flexibility to help firms maintain the lifetime employment commitment over bad times and good.

The timing of wage and bonus decisions frequently differs. Among large unionized companies the general features of the process of base wage determination are quite similar, being the primary concern of the economy-wide pattern-bargaining spring wage offensive (shunto) which typically starts in February and peaks in April. Bonus determination is by comparison a much more idiosyncratic process, with several different possible time patterns of negotiation, depending upon the particular firm.

Bonus payments are also more variable in amount than base wages, on an aggregate level having almost three times the standard error and displaying even more variability relative to wages on an industry level.<sup>8</sup> This reflects a prevailing philosophy that base wages are essentially related to the economy's national performance, while the bonus

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<sup>7</sup> See, e.g., Okuno (1984).

<sup>8</sup> See Ishikawa and Ueda (1984), p. 141 and tables v-2 and v-3.

is sensitive to a company's specific circumstances. Firms typically try to pay a fairly steady number of months' wages as a bonus, and can often succeed in an expanding market, but will seek to impose a substandard bonus if the company suffers economic reverses.<sup>9</sup>

Toyota, as an example of the first type, has paid about the same months' worth of bonus in each year since 1968. But for every Toyota Motor Company there are companies in, say, machine tools or shipbuilding where it is reluctantly accepted that bonuses may vary from zero to ten months' pay in extreme economic conditions. The majority of firms hold an in-between position. Surveys conducted by Nikkeiren, the employers' federation, show that most firms think of bonuses as being influenced by profitability. Among corporations that make an explicit agreement with employees about bonus payments, some 15% of such contracts contain profit-sharing clauses.<sup>10</sup>

All this notwithstanding, I have also heard it said more than once by some specialists on the Japanese economy that bonus payments are so regular as to essentially constitute a form of disguised wage. When pressed, such experts will typically cite examples like the Toyota case above where companies they know change only slowly, if at all, the number of months paid as bonus. A more sophisticated response observes in the data of Table 1 some clear secular trends but no discernable yearly pattern of reacting to current business conditions. Quite clearly bonuses have increased more or less steadily from 1958 to 1974 and thereafter have

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<sup>9</sup> Koshiro (1983b), pp. 241-242, contains a good discussion of bonus responses to profits.

<sup>10</sup> See Japanese Ministry of Labor, General Survey on Wage and Working Hours System.

slowly declined. But there is no evidence in the regular time series of Table 1 that a meaningful response is occurring to a volatile business cycle indicator like annual profits. Or is there?

### The Main Result

In Table 2 are listed real profits for Japanese companies.<sup>11</sup> The data are on a fiscal year basis, ending March 31. Coverage is roughly similar to Table 1.

A first glance at Tables 1 and 2 might appear to confirm the stereotype that bonus payments are independent of profitability. After all, real profits are fluctuating rather violently, while months of bonus paid, despite an undeniable trend, looks to be about as steady a time series as one is likely to encounter in economic data.

But a second reading discloses some interesting possibilities. Look at deviations of real profits from their trend values. When profits deviate substantially from trend, there frequently seems to be a corresponding change of bonus payments in the same direction. A way of capturing this relationship is a standard lagged-adjustment model of the form:

$$\frac{B_t}{B_{t-1}} = \left( \frac{\pi_t}{\pi_{t-1}} \right)^a f(t) \quad (1)$$

In the above expression  $B_t$  represents bonus payments in calendar year  $t$  (expressed as months of base wages in the same year),  $\pi_t$  is real profits in fiscal year  $t$  (April 1 of year  $t-1$  to March 31 of year  $t$ , which

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<sup>11</sup> Real profits are just nominal profits, from the data appendix, divided by an appropriate price index. Because profit data is on a fiscal year basis, from March 31 to April 1, the deflator I have used is one-fourth of the current year's wholesale price index plus three-fourths of the previous year's wholesale price index. There are no dramatic changes in my story if I use other reasonable deflators.

builds in a natural lag consistent with most stories of bonus formation),  $\pi_t^*$  represents "target" or "normal" profits for fiscal year  $t$ , and  $f(t)$  is a time term capturing trends in bonus growth that would occur even if profits were normal. The story being told by equation (1) is that bonus growth is (possibly) influenced by abnormally high or low profitability.

Taking logarithms of both sides, equation (1) might be estimated by the linear regression:

$$\log B_t - \log B_{t-1} = a \log \pi_t^* + G(t) \quad (2)$$

where

$$G(t) \equiv \log f(t) - a \log \pi_t^* \quad (3)$$

is, for convenience, taken to be a polynomial in time. (In practice, additional polynomial terms of higher order are added until the coefficients become insignificant.)

Equation (2) is the prototype regression for this paper. I hasten to add that I have tried a wide variety of alternative specifications, different data sets, etc. -- all of which support the results I will report for (2) and tend to verify that the conclusions are quite robust.<sup>12</sup>

Regression results are summarized in Table 3. They indicate that, in the aggregate, every 10% of profits below trend translates into a bonus payment about 1.4% lower than it otherwise would be. At .14, the elastic-

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<sup>12</sup> When (2) is imposed on the disaggregated sub-sectors behind the aggregated data of Tables 1 and 2, the results for the aggregated data hold "on average," and coefficient values are "reasonable," although they tend to vary among the different industries. There would presumably be even more variability if we had data on the level of the firm. The aggregate result, which is the main focus of this paper, is masking a fair amount of diversity. For instance, small companies pay less wages and bonuses relative to large companies, have a lower bonus to wage ratio, and also display greater bonus variability.



ity of bonus response to profitability is not large, but at eight standard deviations from zero the coefficient is highly significant. I have little hesitation in concluding that, overall, the Japanese bonus system contains a significant profit-sharing component.

### Macroeconomic Implications of the Bonus System

We come now to an interesting and, perhaps, important question.

Does the Japanese bonus system influence macroeconomic performance? Japan has had the lowest average unemployment rate among the major industrialized capitalist economies over the last quarter century. This comparatively outstanding employment record survives corrections for discouraged workers, relatively flexible hours, definitional differences, etc.<sup>13</sup>

Does the existence of a profit-sharing-bonus component of pay help in any way to account for the comparatively low, stable unemployment rate in Japan?

This is a very difficult question to answer.<sup>14</sup> It is not even clear how to pose the appropriate hypothesis formally so that the

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<sup>13</sup> It should be noted that Japan's number one status in having the lowest unemployment rate among major industrialized economies did not emerge until the 1970's. In the 1960's, some other countries like Germany had equally good employment records. There has been some discussion in the literature about the extent to which Japanese statistics may underestimate the unemployment rate by international standards. Taira (1983), Wadhvani (1985), and a few others have tried to argue this case. But it is not very convincing (see, e.g., Sorrentino (1984), Hamada and Kurosaka (1985)). The basic point is that when reasonable adjustment measures are applied uniformly to all countries in an attempt to make international standards more uniform, then all countries' unemployment rates increase slightly, but without much altering their relative standing. Japan's unemployment record remains outstanding even after playing the readjustment game.

<sup>14</sup> Issues of causality are immediately involved. Is the bonus system causing lifetime employment, or is lifetime employment causing the bonus system?

existing data might, at least in principle, allow us to extricate a reasonably controversy-free answer. Rather than trying to confront the issue head on with a formal model, I propose to limit myself here to some crude remarks and calculations based on a more pedestrian approach.

The first issue is to distinguish between the familiar pay flexibility that comes from responsiveness of pay parameters (e.g., base wages) to economic conditions, and the automatic pay flexibility that arises under profit sharing. From a wide variety of regression experiments run with the data presented here, I cannot find any formal statistical evidence that base wages alone respond to profitability. Some of the Phillips-curve-like pay-formation regressions in the literature have picked up, in some instances, a dependence upon profits.<sup>15</sup> But in many of these exercises the authors are attempting to explain the formation of total pay -- defined as wages plus bonuses (and profits may be primarily affecting the bonus component) -- or else it is not clear what is included as "wages." The entire subject of empirical Phillips curve measurements for Japan is worthy of reexamination, with more careful attention focused on separating out base wages from bonuses in the pay-formation process. Meanwhile it seems safe to conclude, from results like Table 3, that bonuses respond more than base wages to profitability, even if the issue of just how responsive to profits are base wages remains unsettled.<sup>16</sup>

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<sup>15</sup> See, e.g., Grubb, Jackman, and Layard (1983), Koshiro (1983b), or the results reported in Hamada and Kurosaka (1985).

<sup>16</sup> The lack of formal analysis convincingly identifying the degree of Japanese wage flexibility should not blind us to the probable fact that wages are, indeed, likely to be quite flexible, and this is almost undoubtedly playing some role in maintaining relatively high employment. The history of response to the first oil shock, recounted later in this

It stands to reason that the existence of a bonus component of pay with a more automatic link to current profitability than base wages should help an economy to maintain a higher level of employment, other things being equal, than if wages alone were paid.<sup>17</sup> But how important a factor, quantitatively, is this likely to be in the Japanese case? Some very rough calculations can be used to indicate the orders of magnitude possibly involved.

The bonus itself is about one quarter of an average worker's total pay. If 14% of the bonus divided by base wage automatically responds to profitability, the following crude imputation can be made. About 3.5% (14% x 25%) of a Japanese worker's total pay can be treated as genuine profit sharing income, compared with the other 96.5%, which for economic purposes is better described as being like an imputed base wage. The idealized theory<sup>18</sup> then predicts that the Japanese economy should behave like an otherwise absolutely identical but hypothetical wage economy whose wages are always 3.5% lower than actual Japanese pay (base wages plus bonus) but whose maintained levels of aggregate demand (real autonomous spending and the money supply) are the same. An equivalent way of visualizing the pure effect of this difference on the employment side alone is to envision the following thought experiment. The historical effect of the bonus system on Japanese unemployment rates is to make the

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paper, while not easy to fit mechanically into a wage equation, bears ample testimony to this thesis. On this interpretation see Hamada and Kurosaka (1985).

<sup>17</sup> This is akin to the proposition that a profits tax causes less unemployment than an equivalent tax on labor.

<sup>18</sup> See Weitzman (1985).

situation as if Japan were an otherwise identical pure wage economy, paying its actual pay (base wages plus bonuses) as pure base wages, but whose aggregate demand has been consistently maintained at a 3.5% higher level. In other words, if someone who thought that Japan was a wage economy and has just now been informed that it is in fact a profit-sharing economy wants to know what difference that makes for employment, the answer is: the same difference as if aggregate demand (real autonomous spending and the money supply) were changed by 3.5%.

This kind of counterfactual historical exercise should be understood in proper perspective. First of all, the calculations are extremely crude. Secondly, they are based on a particular interpretation of a particular theory. Thirdly, the "thought experiment" is necessarily artificial. (If there were lower bonuses but higher wages, it could be argued, wages might become more flexible or fiscal or monetary policy might be changed, thereby neutralizing some of the effects calculated here.)

These limitations notwithstanding, I think the exercise is useful for gaining some rough insight into the likely size of what might be called the "pure bonus effect." The numbers seem to point out a middle ground between two extremes. I would interpret the orders of magnitude involved as suggesting that the Japanese bonus system may have exerted a not insignificant macroeconomic influence by helping to automatically boost Japanese employment rates. But the significance of a 3.5% boost in demand is not nearly so great as to account for the entire story, nor to eliminate output fluctuations,<sup>19</sup> nor to repeal the laws of macro-

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<sup>19</sup> Depending on how output is detrended from its high growth rates, Japanese output stability might be judged outstanding or mediocre. Actually, Japan has a comparatively steady growth rate, if it is measured

economics, nor to do away with the need for discretionary policy to maintain full employment, especially in the face of severe economic shocks.

That the bonus system alone cannot possibly be explaining the entire macroeconomic adjustment story is made abundantly clear by the rather non-neoclassical history of Japan's response to the energy crisis. After the first oil shock, in 1974, consumer prices increased by about 25% and wholesale prices by over 30%. At first the unions had no better premonition than anyone else that a permanent terms-of-trade deterioration was underway, and were concerned to recoup lost purchasing power as well as to obtain their customary pay increase. In the spring offensive of that year, base wages jumped by 33%. At this point, when the mechanics of a potentially vicious wage-price spiral started to become evident, the famous Japanese consensus took over. Government officials, labor experts, businessmen, and labor union leaders began preaching wage and price restraint. The 1975 shunto saw base wages increase by only 13%, and they have been held to the single digit range since then. However much the Japanese bonus system may be helping as an automatic employment stabilizer (months of bonus pay declined sharply after 1974 -- see Table 1), it is but a drop in the ocean when a major macroeconomic shock impacts.

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by relative deviations from a standardized mean,  $\Sigma(g_t/\bar{g} - 1)^2$ . ( $g_t$  is the growth rate in year  $t$ , and  $\bar{g}$  is the average growth rate.) In terms of absolute deviations of growth rates,  $\Sigma(g_t - \bar{g})^2$ , Japan shows more cyclical variability. Note that, with a sprinkling of price stickiness, the relevant model of a profit-sharing economy would predict relatively full employment but some building up of inventories, make-work, or labor-hoarding during slack periods.

Conclusion

This paper makes two basic points.

(1) The Japanese bonus contains a significant profit-sharing component.

(2) While it cannot explain nearly the whole story, and it may be difficult to quantify its exact contribution out of a host of reinforcing tendencies, the profit-sharing bonus probably plays a non-negligible role in helping to stabilize Japanese unemployment at comparatively low levels.

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Table 1

Japanese Bonus Payments  
(in months of base wages)

<u>Year</u>	<u>Bonus</u>
1958	2.21
1959	2.38
1960	2.65
1961	2.90
1962	2.87
1963	2.99
1964	2.97
1965	2.97
1966	3.07
1967	3.17
1968	3.29
1969	3.54
1970	3.64
1971	3.79
1972	3.86
1973	4.26
1974	4.43
1975	3.96
1976	3.91
1977	3.83
1978	3.70
1979	3.76
1980	3.78
1981	3.77
1982	3.70
1983	3.60

Source: bonuses divided by wages; data from the appendix.

Table 2

Real Japanese Profits

(Fiscal year: in trillions of 1980 Yen)

<u>Year</u>	<u>Profits</u>
1959	1.74
1960	2.94
1961	3.29
1962	3.21
1963	3.82
1964	3.97
1965	3.93
1966	5.30
1967	7.08
1968	8.80
1969	11.82
1970	12.38
1971	10.32
1972	13.73
1973	22.55
1974	16.14
1975	7.11
1976	11.13
1977	11.25
1978	14.32
1979	19.51
1980	19.70
1981	15.18
1982	14.05
1983	14.62

Source: nominal fiscal-year profits divided by appropriate price index; data from appendix.

Table 3

The Basic Regression

Dependent Variable:  $\log B_t - \log B_{t-1}$

Independent Variable	Estimated Coefficient	Standard Error	T- Statistic
$\log \pi_t$	.14	1.76E-02	7.9
constant	3.2	.59	5.5
t	-.12	1.9E-02	-6.2
$t^2$	7.4E-04	1.3E-04	5.7

$R^2 = .82$

D-W = 2.39

Sample period: 1958-1983

### Data Appendix

Table 4 contains the basic data behind the regression results being reported in this paper. Data are from the following sources.

Wages and bonuses are from the Japanese Ministry of Labor, Yearbook of Labor Statistics. Wages are average monthly contractual cash earnings and bonus is average monthly special earnings. Both are for regular employees, expressed in thousand Yen, covering establishments employing five or more people in all industries.

The profits data are from the Japan Statistical Yearbook and refer to net recurring profits valued in trillions of Yen. Data are on a fiscal year basis (March 31 to April 1), covering all for-profit corporations except financial and insurance corporations.

The wholesale price index is from the Japan Statistical Yearbook. The price index used to deflate fiscal year profits is one-fourth of the current WPI plus three-fourths of previous year's WPI.

Table 4  
The Basic Data Series

<u>Year</u>	<u>Wage</u>	<u>Bonus</u>	<u>Profits</u>	<u>WPI</u>
1958	15.733	2.895	NA	41.7
1959	16.676	3.301	.821	42.1
1960	17.818	3.929	1.401	42.6
1961	19.487	4.712	1.585	43.0
1962	21.896	5.235	1.550	42.3
1963	24.231	6.030	1.832	43.1
1964	26.801	6.624	1.931	43.2
1965	29.485	7.294	1.916	43.5
1966	32.424	8.288	2.617	44.5
1967	35.778	9.465	3.570	45.4
1968	40.439	11.090	4.512	45.7
1969	46.078	13.586	6.128	46.7
1970	53.228	16.150	6.578	48.4
1971	61.165	19.353	5.619	48.0
1972	70.456	22.644	7.449	48.4
1973	83.674	29.701	12.799	56.1
1974	104.311	38.478	11.015	73.7
1975	122.766	40.463	5.956	75.9
1976	137.180	44.666	9.648	79.7
1977	150.921	48.197	10.163	81.2
1978	162.078	50.041	13.030	79.1
1979	170.416	53.341	17.722	84.9
1980	181.102	57.073	19.704	100.0
1981	190.832	60.015	17.174	101.4
1982	198.736	61.231	16.132	103.2
1983	205.610	61.702	16.924	100.9



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